

RECEIVED:

16. Mai 1999

PATENTANWALTSBÜRO  
S. W. Kuhn + Co.  
Kornhausstr. 3, Postfach  
CH-9001 St. Gallen

P274306

AG

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

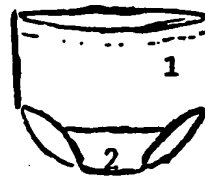
(51) International Patent Classification 6 : A41B 9/00, A61F 13/16, A41B 9/12	A1	(11) International Publication Number: WO 96/36248 (43) International Publication Date: 21 November 1996 (21.11.96)
(21) International Application Number: PCT/CA96/00284 (22) International Filing Date: 9 May 1996 (09.05.96) (30) Priority Data: 2,149,477 16 May 1995 (16.05.95) CA (71)(72) Applicants and Inventors: McMAHON-AYERST, Marilyn [CA/CA]; R.R. #2, Lunenburg, Ontario K0C 1R0 (CA). CLEMENT, Doreen [CA/CA]; R.R. #1, St. Andrews West, Ontario K0C 2A0 (CA). MALONEY-DAWSON, Brenda [CA/CA]; R.R. #2, Lunenburg, Ontario K0C 1R0 (CA).	(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.	

(54) Title: LEAKPROOF AND BREATHABLE UNDERGARMENTS AND SWIM WEAR

## (57) Abstract

In an undergarment known as or referred to as panties, briefs, or underwear, it is known to be usually worn underneath clothing for hygiene purposes. In a swimsuit or swim wear it is known to usually be worn for water and outdoor activities or anytime as the person deems it necessary as an outer garment. In this invention, we have woven into or laminated to the fabric, (all types of fabrics or nonwoven material) a laminate or substance which is leak proof, and breathable. This invention is designed with feminine care in mind, especially during the female menstrual cycle. It can also be used

at any time by a person female or male who feel the need to wear a protective leak proof, breathable garment. All females have various menstrual cycles and flow at various rates and during the heavier flowing days, it is very stressful worrying if you are going to leak through the feminine menstrual product to your outer clothing. Females have to dress accordingly, i.e. wearing dark clothing, long shirts, or long sweaters, etc. in the event of seepage through to their outer garments; to help minimize the embarrassing situation. During sleeping it is almost impossible to prevent leakage onto garments and bedding. By wearing this ultimate wear called Finally (a leak proof breathable under garment or swim wear) it will prevent leakage, and it is breathable thereby allowing continued comfort.



**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AM	Armenia	GB	United Kingdom	MW	Malawi
AT	Austria	GE	Georgia	MX	Mexico
AU	Australia	GN	Guinea	NE	Niger
BB	Barbados	GR	Greece	NL	Netherlands
BE	Belgium	HU	Hungary	NO	Norway
BF	Burkina Faso	IE	Ireland	NZ	New Zealand
BG	Bulgaria	IT	Italy	PL	Poland
BJ	Benin	JP	Japan	PT	Portugal
BR	Brazil	KE	Kenya	RO	Romania
BY	Belarus	KG	Kyrgyzstan	RU	Russian Federation
CA	Canada	KP	Democratic People's Republic of Korea	SD	Sudan
CF	Central African Republic	KR	Republic of Korea	SE	Sweden
CG	Congo	KZ	Kazakhstan	SG	Singapore
CH	Switzerland	LI	Liechtenstein	SI	Slovenia
CI	Côte d'Ivoire	LK	Sri Lanka	SK	Slovakia
CM	Cameroon	LR	Liberia	SN	Senegal
CN	China	LT	Lithuania	SZ	Swaziland
CS	Czechoslovakia	LU	Luxembourg	TD	Chad
CZ	Czech Republic	LV	Latvia	TG	Togo
DE	Germany	MC	Monaco	TJ	Tajikistan
DK	Denmark	MD	Republic of Moldova	TT	Trinidad and Tobago
EE	Estonia	MG	Madagascar	UA	Ukraine
ES	Spain	ML	Mali	UG	Uganda
FI	Finland	MN	Mongolia	US	United States of America
FR	France	MR	Mauritania	UZ	Uzbekistan
GA	Gabon			VN	Viet Nam

LEAKPROOF AND BREATHABLE UNDERGARMENTS AND SWIM WEAR  
Specification

"This invention is an protective garment to prevent leakage and is breathable, and will be worn as an undergarment panty or brief or underwear and in the swim wear it will be worn as an outer garment."

"This invention will be made from any fabric or nonwoven material which will have a laminate or substance woven into the fabric or nonwoven material will be laminated to the fabric or nonwoven material and each seam will be sealed to prevent leakage and ensure breathability. This invention will be made in all sizes, styles, and colours of feminine and masculine underwear, panties, briefs and swim wear.

## Drawings

"In drawings which illustrate embodiments of the invention

Figure 1 is a female full panty with the laminate or substance woven completely into the fabric or nonwoven material, with a cotton gusset, or other fabric gusset.

Figure 2 is a female bikini panty with the laminate or substance woven completely into the fabric or nonwoven material, with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 3 is female panty which only the outer side of the panty is laminated with the substance or laminate, with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 4 is double layer female panty with #1 woven or laminated with laminate or substance and #2 completely fabric or nonwoven material with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 5 is a full female swimsuit with the laminate or substance woven or laminated into the complete fabric or nonwoven material with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 6 is a full female swimsuit with the laminate or substance woven or laminated in the buttocks with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 7 is a female bikini with the complete suit with the laminate or substance woven or laminated with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 8 is a female bikini with the bottom portion with the laminate or substance woven or laminated with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 9 mens briefs with the complete brief with the laminate or substance woven or laminated with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 10 mens boxer with the complete boxer with laminate or substance woven or laminated with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 11 mens bikini with the complete brief with the laminate or substance woven or laminated, with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 12 is a mens brief which is laminated with laminate or substance on the outer side only with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 13 is double layer mens brief with #1 woven or laminated with laminate or substance and #2 completely fabric with a cotton gusset, or other fabric or nonwoven material gusset.

Figure 14 is a male swimsuit with the laminate or substance woven or laminated into the complete fabric with a cotton gusset, or other fabric or nonwoven material gusset.

## We Claim

- Claim 1. A close fitting secondary garment to be worn over existing feminine protective means, said secondary garment selected from the group of panties, briefs, underwear or undergarments and outerwear such as swim wear, said garments fabricated as a laminate of an inner thin, lightly absorbent launderable material and an outer thin, launderable material that is LEAKPROOF and breathable whereby the wearer is protected from secondary flows of menstrual fluid from said existing feminine protection, by the inner lamination which absorbs any spots or light flows, and by the outer semipermeable membrane-type laminate which prevents any of the liquid of said secondary flow from striking through the secondary garment, while the vapour permeability of the semipermeable membrane allows fluid transfer across the secondary garment allowing the secondary flow to dry on the first said inner material whereby the wearer is protected by the entire garment from secondary flows of menstrual fluids.
- Claim 2. The garment of claim 1 wherein the inner and outer materials are bonded together by stitching or adhesives.
- Claim 3. The garment of claim 1 wherein the inner and outer materials are connected together only at their peripheries.

- Claim 4. The garment of claim 1, 2 or 3 wherein extra absorbency provided by an absorbent gusset in the crotch area.
- Claim 5. The garment of claim 4 wherein said gusset is detachable from the remainder of the garment.
- Claim 6. The garment of claims 1 to 3 or 5 wherein the secondary garment is made for non-woven material.
- Claim 7. The garment of claim 1 to 3 or 5 wherein the secondary garment is made from woven material.
- Claim 8. The garment of claim 4 wherein the secondary garment is made from woven material.
- Claim 9. The garment of claim 4 wherein the secondary garment is made form non-woven material.
- Claim 10. The garment of claims 8 or 9 wherein the seams of the secondary garment are sealed and liquid-proof.
- Claim 11. The garment of claims 6 wherein the seams of the secondary garment are sealed and liquid-proof.
- Claim 12. The garment of claim 7 wherein the seams of the secondary garment are sealed and liquid-proof.

- Claim 13. The garment of claims 1 to 12 wherein the leakproof breathable material is a woven component of the fabric.
- Claim 14. A close fitting secondary garment to be worn over existing feminine protective means, said secondary garment selected from the group of panties,briefs, underwear or undergarments and outerwear such as swim wear, said garments fabricated of a laminate lightly absorbent launderable material that is LEAKPROOF and breathable whereby the wearer is protected from secondary flows of menstrual fluid from said existing feminine protection, by the lamination which absorbs any spots or light flows, and the semipermeable membrane-type laminate which prevents any of the liquid of said secondary flow from striking through the secondary garment, while the vapour permeability of the semipermeable membrane allows fluid transfer across the secondary garment allowing the secondary flow to dry on the inside of the secondary garment whereby the wearer is protected by the entire garment from secondary flows of menstrual fluids.
- Claim 15. The garment of claim 14 wherein the inner and outer materials are bonded together by stitching or adhesives.
- Claim 16. The garment of claim 14 wherein the inner and outer materials are connected together only at their peripheries.



- Claim 17. The garment of claim 14, 15, or 16 wherein extra absorbency provided by an absorbent gusset in the crotch area.
- Claim 18. The garment of claim 17 wherein said gusset is detachable from the remainder of the garment.
- Claim 19. The garment of claims 14 to 16 or 18 wherein the secondary garment is made for non-woven material.
- Claim 20. The garment of claim 14 to 16 or 18 wherein the secondary garment is made from woven material.
- Claim 21. The garment of claim 17 wherein the secondary garment is made from woven material.
- Claim 22. The garment of claim 17 wherein the secondary garment is made form non-woven material.
- Claim 23. The garment of claims 21, or 22 wherein the seams of the secondary garment are sealed and liquid-proof.
- Claim 24. The garment of claims 19 wherein the seams of the secondary garment are sealed and liquid-proof.
- Claim 25. The garment of claim 20 wherein the seams of the secondary garment are sealed and liquid-proof.
- Claim 26. The garment of claims 14 to 25 wherein the leakproof breathable material is a woven component of the fabric.

figure 1

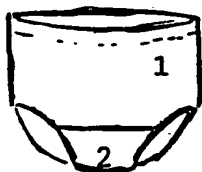


Figure 2



Figure 3

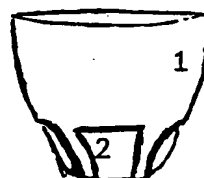


Figure 4



Figure 5

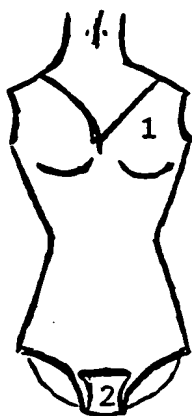


Figure 6

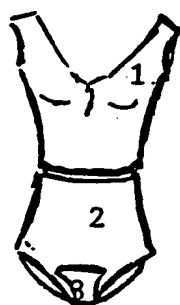


Figure 7

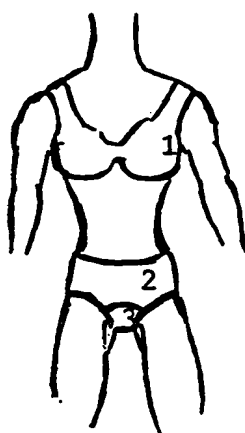


Figure 8

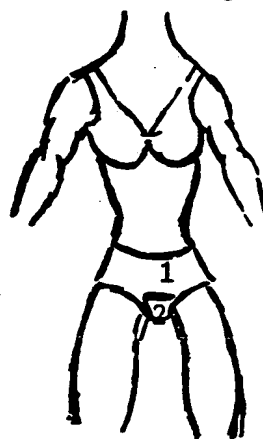


Figure 9

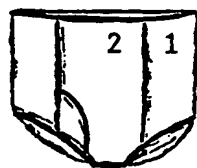


Figure 10

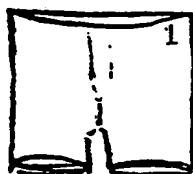


Figure 11

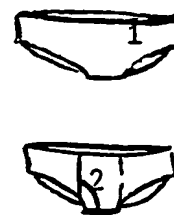


Figure 12

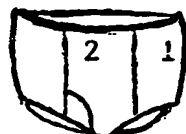
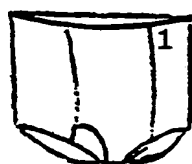
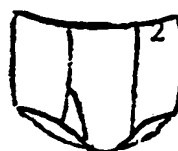


Figure 13



+



=

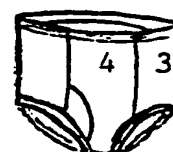
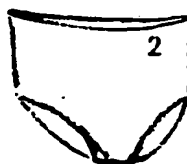
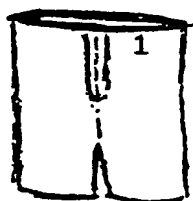


Figure 14



# INTERNATIONAL SEARCH REPORT

Inter. Appl. Application No  
PCT/CA 96/00284

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 6 A41B9/00 A61F13/16 A41B9/12

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 6 A41B A61F A41D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US,A,5 155 867 (NORVELL) 20 October 1992  see column 1, line 47-54 see column 2, line 19-31 see column 3, line 17 - column 4, line 10; figures 1,2  ---	1,2,14, 15
Y	US,A,4 194 041 (GORE ET AL.) 18 March 1980 see column 2, line 25-44 see column 3, line 5-16; claims 1,5,6  ---	1-26
Y	US,A,5 098 419 (GOLD) 24 March 1992 see column 3, line 36-44 see column 4, line 25-37; claims 1,4-7  ---  -/--	1-26

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

\*A\* document member of the same patent family

Date of the actual completion of the international search

12 September 1996

Date of mailing of the international search report

30.09.96

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+ 31-70) 340-2040, Tx. 31 651 epo nl,  
Fax (+ 31-70) 340-3016

Authorized officer

Monné, E

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/CA 96/00284

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP,A,0 327 823 (DARLINGTON FABRICS) 16 August 1989	1,2,4,5
X	see column 1, line 23 - column 2, line 13 see column 3, line 16 - column 4, line 1	14,15, 17,18
A	US,A,4 813 950 (BRANCH) 21 March 1989 see column 2, line 61 - column 3, line 38	1-3,14, 16
A	DE,U,93 16 248 (BÜTOW ET AL.) 27 January 1994 see page 2, line 10 - page 3, line 14	1,14
A	EP,A,0 627 177 (INTELPRO) 7 December 1994 see abstract	1,14
A	WO,A,92 12648 (W.L. GORE & ASSOCIATES) 6 August 1992 see page 7, line 1-18	1,14

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA 96/00284

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A-5155867	20-10-92	DE-T- 4291601 GB-A,B 2272147 JP-T- 7500382 SE-A- 9303569 ✓ WO-A- 9220245	09-06-94 11-05-94 12-01-95 29-10-93 26-11-92
US-A-4194041	18-03-80	AU-B- 524128 AU-A- 4636079 CA-A- 1112551 DE-A- 2925318 DE-C- 2954263 FR-A- 2429666 GB-A,B 2024100 HK-A- 63183 JP-C- 1388850 JP-A- 55007483 JP-B- 60039014 NL-A- 7904783 SE-B- 445815 SE-A- 7902163	02-09-82 03-01-80 17-11-81 17-01-80 06-03-86 25-01-80 09-01-80 09-12-83 14-07-87 19-01-80 04-09-85 03-01-80 21-07-86 30-12-79
US-A-5098419	24-03-92	NONE	
EP-A-0327823	16-08-89	US-A- 4880424 AU-A- 2966189 JP-A- 1314701	14-11-89 10-08-89 19-12-89
US-A-4813950	21-03-89	NONE	
DE-U-9316248	27-01-94	NONE	
EP-A-0627177	07-12-94	US-A- 5319807 US-A- 5385502 US-A- 5414870 US-A- 5471683 US-A- 5435014 AU-A- 6317794 CA-A- 2123770 EP-A- 0627180 EP-A- 0626140	14-06-94 31-01-95 16-05-95 05-12-95 25-07-95 01-12-94 26-11-94 07-12-94 30-11-94

# INTERNATIONAL SEARCH REPORT

Information on patent family members

Inter nal Application No

PCT/CA 96/00284

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP-A-0627177		EP-A- 0627179	07-12-94
		EP-A- 0627178	07-12-94
		JP-A- 7003502	06-01-95
		US-A- 5353524	11-10-94
		AU-A- 6343194	08-12-94
		CA-A- 2124649	05-12-94
		JP-A- 7048703	21-02-95
		NZ-A- 260642	26-07-95
		US-A- 5441436	15-08-95
		AU-A- 6456694	22-12-94
		CA-A- 2125132	18-12-94
		CA-A- 2125890	18-12-94
		JP-A- 7133501	23-05-95
		AU-A- 6461194	23-03-95
		CA-A- 2125226	09-03-95
		JP-A- 7097704	11-04-95
		AU-A- 6735094	25-05-95
		JP-A- 7145502	06-06-95
-----			
✓ WO-A-9212648	06-08-92	NONE	
-----			